

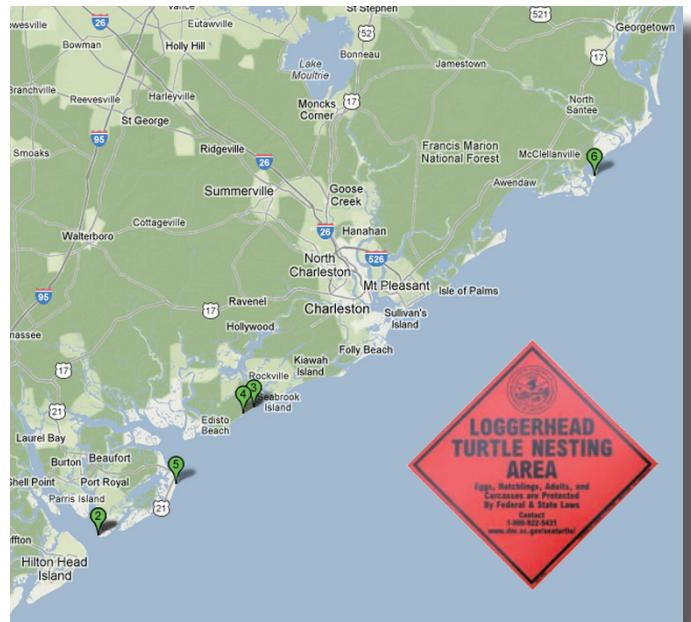


LOGGERHEADLINES

NORTHERN RECOVERY UNIT LOGGERHEAD DNA PROJECT

The Georgia (GA) Department of Natural Resources (DNR), North Carolina (NC) Wildlife Resources Commission and the South Carolina (SC) DNR sea turtle programs are participating in a multi-state genetics research project along with the University of Georgia to answer several basic loggerhead sea turtle nesting questions. Answers to these questions will help biologists better understand how the loggerhead population is doing. To date, samples from 12,803 nests have been collected from GA, NC and SC. Dr. Brian Shamblin has successfully assigned a DNA ID code to 11,986 of these samples. A complete summary of the DNA results is below. The map to the right is an example of one SC nesting loggerhead. She laid six (6) nests on five (5) beaches in SC: Bay Point Island (two nests), Botany Bay Plantation, Edingsville Beach, Hunting Island State Park and Cape Island in the Cape Romain National Wildlife Refuge (CRNWR). For complete information on the status of this project, please visit:

<http://www.dnr.sc.gov/seaturtle/genetics.htm>.



Current DNA Results From 12,803 Nests (as of January 19, 2012)

DNA Samples Assigned: 12,090 (94.4%)
 Unique Individual Females: 3,664
 Females with Only One Recorded Nest: 626
 Maximum Number of Beaches Visited: 5 beaches
 Nests per Female: 3.30 and 3.53* nests
 Maximum Number of Nests: 7 nests

Mean Site Fidelity Index: 22.08 km
 Minimum Site Fidelity Index: 0.00 km
 Maximum Site Fidelity Index: 663.92 km
 Mean Internesting Period: 14.63 and 12.64* days

*corrected for possible missed nests

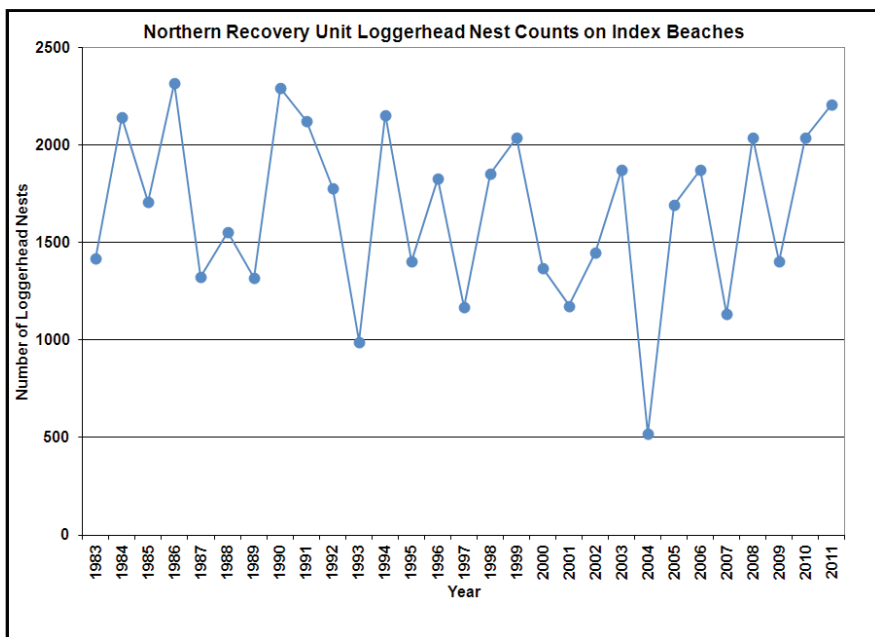
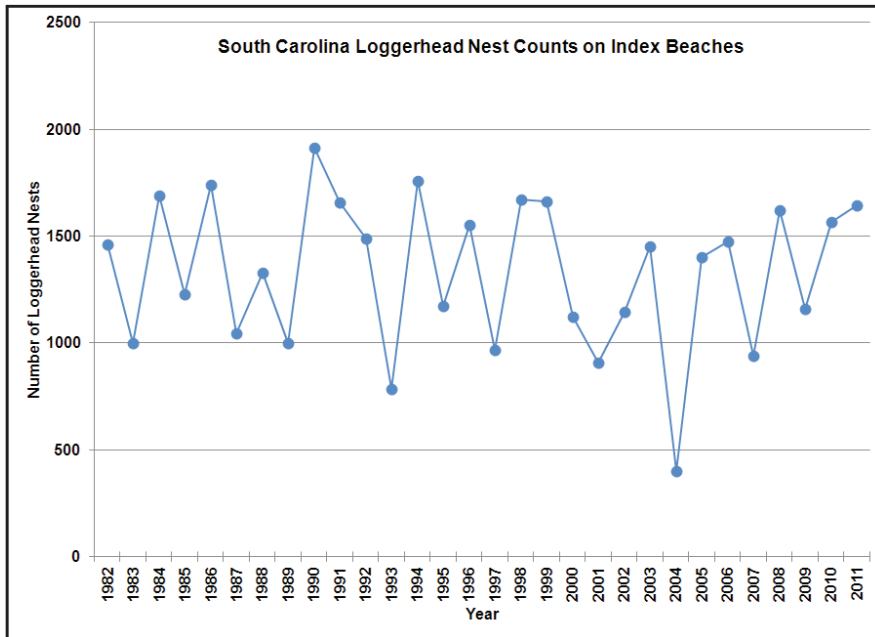
SEA TURTLE NESTING IN 2011

There were 4026 loggerhead nests on project beaches in 2011. Please refer to the table on page seven of this newsletter for nest counts on individual beaches. This season also included four (4) leatherback and three (3) green nests. Please refer to the table on page four and also visit the online nest database hosted by seaturtle.org for more detailed information on the 2011 nesting season: www.seaturtle.org/nestdb/index.shtml?view=2.

LONG-TERM NESTING TRENDS

South Carolina has six (6) index beaches that have been conducting standardized ground surveys for loggerhead nests since 1982. These beaches include South Island, Cape Island, Lighthouse Island, Edisto Beach State Park, Edisto Beach and Fripp Island. Index nesting beach surveys must meet the following criteria: (1) begin in May and continue through August, (2) occur daily, throughout the nesting season and (3) length is standardized throughout the nesting season, although small changes (± 0.5 km) in beach length are al-

lowed. These six (6) beaches represent approximately 41% of the nesting effort. The annual number of loggerhead nests over this 29 year period indicates no significant change, positive or negative, but follows a period of general decline from 1980 to 2004. The figure below shows annual loggerhead nest counts on index nesting beaches in SC from 1982 – 2011. The natural trend includes high, medium and low years. Both 2010 and 2011 were good years. It remains to be seen as to whether or not the 2012 nesting season will follow this recent upward trend. Historically speaking, nesting prior to 1982 was relatively much denser in SC with over 2000 nests solely on Cape Island in the early 1970's. This is compared to an annual average of 1,000 nests on Cape Island in recent years. The nest count trend for index beaches from the region (GA, NC and SC) is similar (see second figure below).



The South Carolina Marine Turtle Conservation Program began in 1977 with beach management research. The program further developed in the early eighties with the formation of the nest protection and stranding volunteer networks along the coast of South Carolina. Today, the program encompasses research, management, monitoring and education within the local, regional and international communities. We are indebted to the continued passion, dedication and effort of our staff, partners and volunteers.

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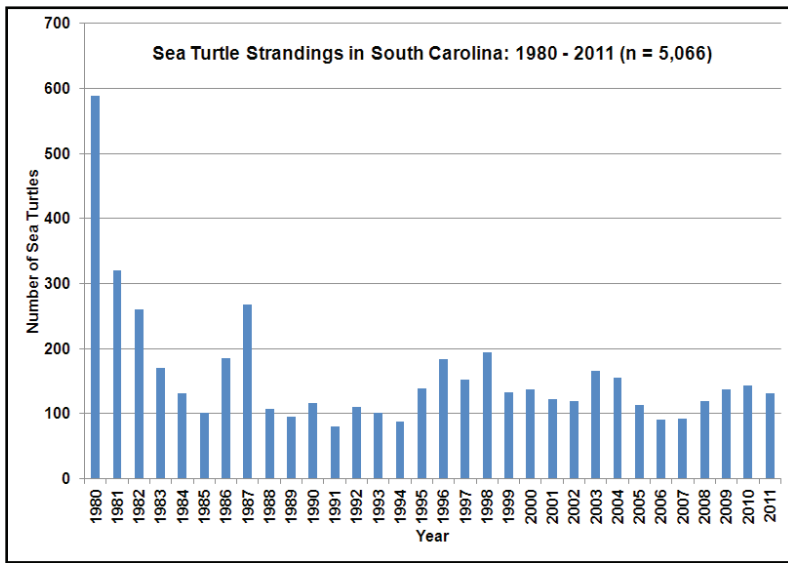
Web Site ~ www.dnr.sc.gov/seaturtle/

The South Carolina Department of Natural Resources prohibits discrimination on the basis of race, color, gender, national origin, disability, religion or age. Direct all inquiries to the Office of Human Resources, PO Box 167, Columbia, SC 29202.

This program is funded in part with grants from NOAA Fisheries and the US Fish and Wildlife Service under Section 6 of the Endangered Species Act. Data presented in *Loggerheadlines* are not to be used in any publication, product, or commercial application without prior written consent of the data owner.

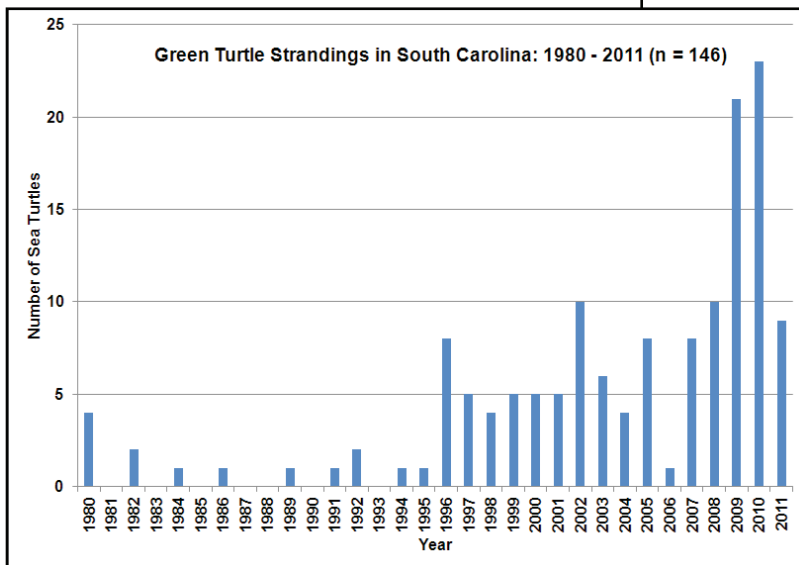
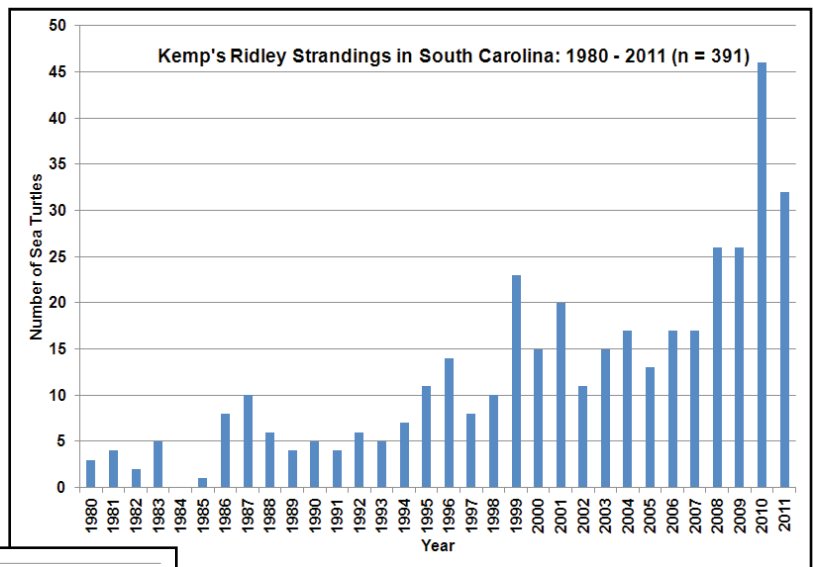


STRANDING, POST-MORTEM AND REHABILITATION



Strandings in 2011 (n = 141) were slightly lower than 2010 (n = 144), but not different from the 10-year mean of 130. Of these 141, 29 turtles stranded alive (13 were released, four (4) are undergoing care at the SC Aquarium and 12 died). There was one (1) stranding reported January through March, 20 in April, 39 in May, 32 in June, 19 in July, 9 in August and 21 September through December. The species composition of those stranded was 92 loggerheads, 38 Kemp's ridleys, 10 green, and one (1) leatherback. By county (north to south), Horry = 19, Georgetown = 12, Charleston = 78, Beaufort = 27, Colleton = 5 and Jasper = 0. Twenty-seven post-mortem exams were performed. Thirteen (13) indicated an acute death (nine (9) interacted with watercraft, two (2) indicated shark predation and two (2) were

entangled), six (6) indicated chronic mortality (disease) and eight (8) could not be rated. Visit <http://www.seaturtle.org/strand/>. Overall, the number of strandings (all species combined) appears to be stable (see above). However, if you separate out each species, the story is a little different. Loggerhead and leatherback strandings have remained about the same but there have been notable increases in the number of Kemp's ridley and green sea turtle strandings (see right and below). The size distribution of loggerheads has shifted towards larger animals, while the size distribution of Kemp's ridleys has shifted towards smaller animals. The size distribution of green sea turtles has not changed.



In 2011, the South Carolina Aquarium admitted 23 live strandings, releasing 29 back into the ocean. This brings the total released to 83. Four loggerheads are currently being treated in the Sea Turtle Hospital. Little River, Jammer, Hamlin Creek, and Gumbly are doing well but will spend the winter in the Sea Turtle Hospital to finish recuperating. To learn more about their treatment, go to www.scaquarium.org. Thank you for helping to make this a successful year!



2011 Sea Turtle Nesting Season Summary Data

Nests: 4,026	Mean Hatch Success: 58.2%
Unique Females: 1,103	Mean Emergence Success: 55.4%
<i>In Situ</i> : 2,244	Emerged Hatchlings: 214,717
Relocated: 1,780 (44.2%)	Mean Incubation Duration: 53.3 days
Hatchery: 359 (8.9%)	Mean Clutch Count: 111.9 eggs
Lost Nests: 759 (18.8%)	Program Nest Success: 63.9%
False Crawls: 4,688	Program Beach Success: 46.2%

TAG RECAPTURES

Three tag recaptures have been reported to us this year. Two of these were stranded sea turtles that washed up on the beach. The first was a healthy (dead) adult female loggerhead that stranded in Murrells Inlet with a watercraft injury. This turtle was initially caught on the north side of the Charleston, SC harbor entrance channel jetty on June 18, 1997 in a shrimp trawl, and was tagged by the Gulf & South Atlantic Fisheries Development Foundation. The second stranding was a juvenile Kemp's ridley that originally stranded alive with a fractured flipper on DeBordieu Beach on May 22, 2009. This turtle was a patient at the SC Aquarium for two years and was released on May 10, 2011. It was found stranded again on June 28, 2011 on Botany Bay Beach with fatal wounds indicating shark predation. The third recapture was a live juvenile loggerhead caught by the SCDNR Marine Resources Division In-Water Trawl Survey on May 27, 2011. This turtle was initially found entangled in the ocean off North Myrtle Beach on August 24, 2009. It was rehabilitated and released on May 1, 2010. Between release and recapture, this turtle's weight increased from 102 to 127 pounds and the length increased almost 3 cm (1.25 inches), which is a normal rate of growth for a juvenile loggerhead of this size.



NETWORK NEWS



AND THE AWARD GOES TO... In 2011, retired DNR state sea turtle conservation coordinator, Sally Murphy, received a Lifetime Achievement Award at the 31st Annual International Sea Turtle Symposium (ISTS) in San Diego, CA. The ISTS Lifetime Achievement Award honors an individual that has had a significant impact on sea turtle biology and conservation throughout the course of their career and is the highest honor given by the Society. Additionally, the ISTS honored Dr. Brian Shamblin with the best student presentation for his ongoing multistate genetics research (see page one of this newsletter).

At the 2011 SCDNR Marine Turtle Program post-season appreciation meeting, four awards were presented for sea turtle conservation efforts in SC. Judith Beahn of Folly Beach was recognized for her outstanding dedication to the sea turtle conservation community. The second award was presented to Joe Pezzullo and the Kiawah Island Turtle Patrol in appreciation for their many years of sea turtle research collaboration. The third award was presented to Mary Pringle for her unwavering positive attitude and thoroughness in response to sea turtle strandings. Mary Pringle has handled 160 strandings in the past twelve years. The final award was presented to the SCDNR Law Enforcement Division in appreciation of their support of the sea turtle program. South Carolina has over 1100 cooperators that work together for the conservation of sea turtles. SCDNR and the citizens of SC are indebted to all those cooperators who dedicate their time and energy to the conservation of sea turtles.

HURRICANE IRENE: Hurricane Irene passed the beaches of SC on August 26, 2011. While the majority of SC residents were not severely affected by the storm, the sea turtle nests that were still incubating were significantly affected. Approximately 378 nests (50% of the nests that were still incubating, or 9% of the total nests laid in 2011) were completely lost to the storm. Several nests that began to hatch prior to the hurricane were washed away, preventing volunteers from investigating the success of many nests. Incubating nests that were not completely washed away were likely affected by severe washover events that occurred on a number of beaches. The CRNWR was hit especially hard since it comprises 25% to 30% of the state's

nesting effort. CRNWR reported approximately 1,449 nests this year, and 128 out of the remaining 215 nests were lost to Irene. Photograph courtesy of NASA/NOAA GOES.

WATIES ISLAND: Congratulations to the Waties Island sea turtle project for being selected as a recipient of the Four Star Plumbing and Air Conditioning \$1,000 award. Funds will be used for nest protection efforts and outreach materials.

NORTH ISLAND: During 2011, North Island (part of the SCDNR Tom Yawkey Wildlife Center), was surveyed during the entire loggerhead nesting season thanks to a group of extremely dedicated volunteers. There were 158 loggerhead nests documented, ranking North Island among the densest loggerhead nesting beaches in SC. Nest depredation by hogs and other mammalian predators continues to present a challenge for sea turtle nest protection efforts on this beach.

CNNi's GOING GREEN: The SC sea turtle conservation community was honored this year to be featured with Philippe Cousteau on CNNi's Going Green. The film focused on our eroding beaches and sea turtle conservation efforts by the SCDNR Marine Turtle Program, the CRNWR sea turtle project and the SC Aquarium.



2012 SEA TURTLE CALENDAR: This calendar is dedicated to those who work with sea turtles on the beaches, and at sea turtle rehabilitation facilities along the eastern United States. Their dedication and your financial support are critical to the future of the species. Learn how you can help -- visit their websites and get involved. This calendar represents the photographic skills of photographers from Costa Rica to Charleston, SC. Visit www.bergwerfgraphics.com to order the 2012 Sea Turtle Calendar. A donation from the sale of each calendar is given to the SC Aquarium.

SEATURTLE.ORG

SEATURTLE.ORG: Do not forget about our wonderful resource seaturtle.org. This web site has become the online source for all sea turtle news, events, jobs, current research and information. Seaturtle.org supports our online nest, genetic and stranding databases. One great way to support seaturtle.org and your local project is by [adopting a nest](#). Show your support for this great resource by visiting the site or donating today: <http://www.seaturtle.org>.

VALUE OF VOLUNTEER TIME: In 2010, a new initiative to document volunteer time was implemented through an online reporting system. Documenting this volunteer time is important for matching federal grant dollars (financial support for the program) and emphasizing the public's support of sea turtle conservation in SC. In 2010, a total of 391 individuals documented their time (36% participation). These 391 participants dedicated 21,922 hours and drove 66,286 miles. Using \$16.26 per hour and 50¢ per mile, this volunteer effort is valued at \$389,595 and provides grant matching power for one year equal to \$1,168,782! The results in 2011 were similar. A total of 376 individuals documented their time. These 376 participants dedicated 17,364 hours and drove 86,249 miles. Using \$16.53 per hour and 50.5¢ per mile, this volunteer effort is valued at \$330,583 and provides grant matching power for one year equal to \$991,749! This grant matching power is critically important to our program especially during the current economic climate of our state. Visit here to learn more: <http://www.seaturtle.org/volunteer/>.

Protect Beach-Nesting Birds - Felicia Sanders: Remember from April to August beach-nesting birds congregate along the coast of South Carolina to breed. These include least terns and black skimmers that nest in groups called colonies and Wilson's plovers and American oystercatchers that nest singly. They nest above the high tide line and lay their eggs in nests that are a little more than a scrape in the sand. Eggs and chicks are camouflaged so they will not be seen by predators. Downy chicks leave their nests soon after hatching and wander between the dunes and water's edge to be fed. Young chicks may hide and rest



in tire ruts below and above the high tide line. Beach-nesting birds are extremely sensitive to human disturbance. Every time a bird is forced to fly, it burns valuable energy needed to survive. When people wander too close to nesting areas, adults leave eggs and chicks exposed to extreme temperatures and predators. So please avoid driving above the high tide line where birds are possibly nesting. Be aware of birds calling loudly. This may indicate you are too close to a nest or chicks. Walk and drive carefully, especially at ends of islands and inlets, watching for cryptic eggs and chicks. These birds are declining and need your help. If you have questions about beach-nesting birds, please contact SCDNR biologist Felicia Sanders: sandersf@dnr.sc.gov. Photograph courtesy of Barbara Bergwerf.

REGIONAL NEWS

ADOPT A SEA TURTLE NEST

Loggerhead Sea Turtle Listing Final Rule - NOAA and the US Fish and Wildlife Service issued a final rule this year changing the listing of loggerhead sea turtles under the Endangered Species Act from a single threatened species to nine distinct population segments (DPSs) listed as either threatened or endangered. Scientists believe this will help focus their sea turtle conservation efforts to the specific needs of the distinct populations. In the final rule, five were listed as endangered (Northeast Atlantic Ocean, Mediterranean Sea, North Indian Ocean, North Pacific Ocean and South Pacific Ocean) and four (South Atlantic Ocean, Southwest Indian Ocean, Southeast Indo-Pacific Ocean and Northwest Atlantic Ocean) as threatened. Scientists found that the Northwest Atlantic Ocean DPS (the DPS that SC loggerheads belong to) is threatened based on review of nesting data available after the proposed rule was published, information provided in public comments to the proposed rule, and further analysis within the agencies. Even so, substantial conservation efforts are underway to address the threats to these DPSs.

Florida - The Florida Fish and Wildlife Conservation Commission and its partners documented a record high annual nest count for green turtles in Florida. Leatherback turtles also had a high number of nests, with the count falling just shy of the previous high mark in 2009. Loggerheads, the species that nests most commonly in Florida, did not have an increase in numbers this year. The nest count for this federally threatened sea turtle was close to average for the previous five years. However, since 1998, the trend in the number of loggerhead nests is a general decline. For more information about sea turtle nesting in Florida, visit <http://myfwc.com/news/news-releases/2011/october/10/sea-turtle-success/>.

Georgia - GADNR cooperators located a total of 1,987 loggerhead, one (1) green and 11 leatherback nests in 2011. The long-term average is just over 1,000 nests. The trend is a long-term decline with a low point in 2004 and then what appears to be an increasing trend following 2004. There were 191 sea turtle strandings this year.

North Carolina - There were 948 loggerhead, 14 green, one (1) Kemp's ridley and four (4) unknown sea turtle nests observed. This is the first time there were over 900 nests since 1999, but not the biggest year on record. The total number of stranded turtles was 453. North Carolina had several cold-stun events at the beginning and end of 2011.

SCDNR Regional In-Water Sea Turtle Trawl Survey - Mike Arendt: A seventh year of sampling in the regional sea turtle trawl survey area (coastal waters offshore of Winyah Bay, SC to St. Augustine, FL) was completed in 2011. A little over four hundred sampling events captured 135 loggerheads (including one individual captured twice), 33 Kemp's ridleys, and one (1) green sea turtle. Since 2000, catch rates for loggerheads remain stable overall and for the 5 cm size classes between 55.1 to 75.0 cm SCL-min; however, statistically significant increases continue for loggerheads 75.1 to 80.0 cm SCL-min, which corresponds to the transition from juvenile to adult. Catch rates for Kemp's ridleys increased dramatically in 2011 relative to other years (primarily turtles 30.1 to 35.0 cm SCL-min). Despite elevated catches in 2011, the long-term trend for this species is stable; continued annual increases in catch rates are anticipated given recent nest count trends for Kemp's ridleys.

SCDNR Marine Turtle Conservation Program ~ www.dnr.sc.gov/seaturtle/

SC Projects	2004	2005	2006	2007	2008	2009	2010	2011
Waties Island	ND	ND	ND	17	13	8	2	19
North Myrtle Beach	ND	1	ND	ND	5	2	11	21
Myrtle Beach	ND	8	ND	ND	15	4	4	16
Myrtle Beach S.P.	2	3	0	2	7	1	1	4
Surfside Beach	0	1	1	0	2	1	2	5
Garden City	0	1	0	2	5	0	5	6
Huntington Beach S.P.	10	5	14	3	10	7	9	23
Litchfield Beaches	5	14	17	8	15	9	9	42
Pawleys Island	1	9	10	11	22	9	16	24
DeBordieu/Hobcaw	15	27	49	36	38	38	29	62
North Island	ND	ND	ND	ND	ND	ND	26	158
Sand Island	ND	ND	ND	ND	33	24	66	175
South Island	16	123	102	85	170	97	138	150
Cape Island	249	826	1027	531	1114	750	1045	1075
Lighthouse Island	95	232	195	178	211	141	177	241
Bull Island	ND	ND	ND	116	106	109	138	133
Capers Island	ND	ND	ND	ND	ND	ND	11	5
Deweese Island	3	9	21	7	18	16	15	13
Isle of Palms	8	52	15	23	27	19	23	42
Sullivans Island	2	4	0	3	3	4	2	4
Morris Island	ND	ND	ND	ND	ND	ND	1	5
Folly Beach	22	37	51	20	63	35	54	82
Kiawah Island	64	154	201	98	232	128	219	256
Seabrook Island	4	51	64	16	62	37	68	38
Botany Island	27	79	80	45	137	72	97	184
Botany Bay Plantation	49	140	134	67	242	131	176	141
Interlude	ND	ND	ND	ND	ND	ND	14	10
Edingsville Beach	16	73	90	57	46	64	58	71
Edisto Beach S.P.	20	94	71	65	50	68	103	65
Edisto Beach	11	88	50	66	49	77	80	42
Otter Island	ND	ND	ND	ND	ND	ND	5	73
Harbor Island	22	38	28	18	21	25	30	68
Hunting Island	19	90	62	64	60	80	111	68
Fripp Island	9	40	31	14	35	27	25	69
Pritchards Island	29	72	66	26	34	ND	ND	87
Little Capers Island	ND	ND	ND	ND	ND	ND	39	39
St. Phillips Island	4	ND	ND	7	14	ND	3	18
Bay Point Island	ND	ND	ND	ND	ND	ND	35	68
Hilton Head Island	69	163	186	112	200	180	239	324
Daufuskie Island	ND	ND	ND	19	62	31	65	69
TOTAL	771	2434	2565	1716	3121	2194	3151	3995*

*Total excludes 31 nests laid on small sandy beaches inside inlets. Increased survey effort contributed to increase.

ANNOUNCEMENTS FROM THE SEA TURTLE OFFICE

Our Web Site Has Improved: The SCDNR Marine Turtle Program web site has had a face-lift. Improvements include easier navigation and a photo gallery. Be sure to visit: www.dnr.sc.gov/seaturtle/.

32nd Annual Sea Turtle Symposium in Huatulco, Mexico; 13-16 March 2012.

Visit: <http://iconferences.seaturtle.org/>.

Southeast Regional Sea Turtle Meeting in Jekyll Island, GA; 1-4 February 2012.

Visit: <http://iconferences.seaturtle.org/serstm>.

SC CTurtle List Serve - Keep up with all sea turtle news in SC and beyond by joining our list serve. If you would like to join, please send an email to coastbio@dnr.sc.gov.

Beach Vitex Task Force: Please continue to report any possible locations of beach vitex by submitting a report form online. It is important that the plant not be removed until it has been positively identified.

Visit: www.beachvitex.org.

Adopt-a-Sea-Turtle-Nest: You can now adopt-a-nest in South Carolina. Proceeds benefit the individual project and seaturtle.org. For more information visit <http://www.seaturtle.org/nestdb/adopt/>.

Educational Resources: Please visit our education page for sea turtle educational materials:

<http://www.dnr.sc.gov/seaturtle/outreach.htm>.

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SCDNR Needs Your Support! Citizens of South Carolina can support DNR through a direct donation to the sea turtle program, the purchase of the endangered species license plate and Check-Off for Wildlife. The Endangered Wildlife Fund is the foundation of support for threatened and endangered wildlife in South Carolina. Look for line 26 on the long form (SC1040) or line 13 on the short form (SC1040A) of the South Carolina Department of Revenue Individual Tax Return form, then complete and submit Form I-330. Help us keep wildlife in your life!

For more information visit: <http://www.dnr.sc.gov/seaturtle/support.htm>.

